Claims

1. A method of designing a redox flow battery system comprising a redox flow battery to force electrolytic solution to be fed to and discharged from its cells, comprising the steps of:

determining an external parameter given by an operating condition of the redox flow battery a designer cannot choose voluntarily,

determining an internal parameter given by a design condition of the redox flow battery the designer can design voluntarily,

determining an average value of variables of the external parameter and standard deviation, and

determining an optimum value of the internal parameter based on at least either of the average value and the standard deviation.

2. The method of designing a redox flow battery system according to Claim 1, wherein the external parameter includes at least one of an output of battery for smoothing an output of power generation of generating equipment that varies irregularly in output of power generation, an outside air temperature at an installation location of the battery, and an output of the battery for smoothing power consumption of load power that varies irregularly in power consumption, and the internal parameter includes at least one of a specified output of the battery, the number of batteries, the number of cells, a fluid volume of an electrolytic solution reservoir tank, a flow rate of the electrolytic solution for each cell, a temperature of the electrolytic solution, a specified output of a DC/AC converter for converting the battery output, and the number of DC/AC

converters for converting the battery output.

3. The method of designing a redox flow battery system according to Claim 2, which comprises the steps of:

determining an average value of output distribution of the redox flow battery for smoothing the output of power generation of the generating equipment that varies irregularly in output of power generation, and the standard deviation, and

determining the at least one of the specified output of battery, the number of batteries, the specified output of the DC/AC converter for converting the battery output, and the number of DC/AC converters for converting the battery output, based on the average value and the standard deviation.

4. The method of designing a redox flow battery system according to Claim 3, wherein the specified output of the DC/AC converter is set to be in the range of not less than 1 time to not more than 4 times of the standard deviation.

5. The method of designing a redox flow battery system according to Claim 3, wherein the specified output of the battery is set to be in the range of not less than 0.7 time to not more than 2 times of the standard deviation.